



GIRLS STEAM AHEAD WITH NASA

NASA'S UNIVERSE OF LEARNING

<https://www.universe-of-learning.org/gsawn>

Summary Document of Resources

Full descriptions of resources are available on the NASA's Universe of Learning website

Hands-On Resources: Engage in the process of science using NASA Astrophysics data

- Recoloring the Universe—Learn the basics of coding and see how images are created and modified
 - Facilitation: Includes variations for a computer (video tutorials walk through each stage of the activity) and for pencil & paper
- Observing with NASA—Use robotic telescope to collect real images and data then learn to process them
 - MicroObservatory—Take images of astronomical objects, such as the Orion Nebula or Moon
 - DIY Planet Search—Collect spectroscopy* data of exoplanets (*the study of light as a function of wavelength)
 - Facilitation: Computer resources, printer (optional), includes some video tutorials
- Universe in 3D—Use Tinkercad to explore coding and spatial relationships.
 - Facilitation: Computer resources, 3D printer (optional)
- Scale Models of our Solar System and the TRAPPIST-1 system—Compare the size of solar systems
 - Facilitation—PDF guide includes printable cards and pre-calculated distances
- Binary—Learn the basics of binary by writing your name in binary and creating binary bracelets/pins
 - Facilitation: Paper/pen, Beads and string or pin
- Tactile Universe—Uses Braille, tactile techniques, large format text, and audio formats

Self-guided, interactives

- Eyes on Exoplanets—Fly around distant solar systems and learn about exoplanets we have discovered
- Exoplanet Travel Bureau—Explore exoplanets through virtual reality and 360° videos

Exhibits: Use in libraries and informal education venues to delve deeper into NASA Astrophysics science

*Many exhibits are available for download and printing. Physical copies of exhibits may be available for a rotating visit.

- Here, There, Everywhere (also available in Spanish)
- AstrOlympic (Winter and Summer available; includes supplemental videos; Summer is also available in Spanish and Portuguese)
- Light: Beyond the Bulb (also available in Spanish, Portuguese, and German)
- From Earth to the Universe
- Visions of the Universe (includes supplemental booklet)

Posters: Draw attention to your girl-serving programming or use as inspiration for your space

*Available for download and printing. Pre-printed posters may be available in limited supply.

- Women in STEM Poster Series (also available in Spanish)
- Women of Color: Pioneers and Innovators

Webinars: Use pre-recorded webinars to explore new hands-on activities, learn about best practices for engaging girls, and hear from NASA scientists and engineers

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